REMARKS

Claims 1, 2, 4, 5, 6, 10, 15, 26, 27, 29, 31, 38, 39, 40, 50, 51, 53, and 54 are amended. No claims have been added or canceled. Hence claims 1 – 10, 12 – 18, 26 – 29, 31, and 38 – 55 are pending in the application.

SUMMARY OF REJECTIONS

Claims 1, 10, 15, and 50 are rejected under 35 USC 101.

Claims 10, 12 - 14, 29, and 44 - 46 are rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 – 10, 12 – 14, 26 – 29, 31, 38 – 46, and 50 – 55 are rejected under 35 USC 103(a) as being unpatentable by U.S. Patent No. 6,161,130, herein Horvitz.

Claims 15 – 18, 31, and 47 – 49 are rejected under 35 USC 103(a) as being unpatentable over Horvitz in view of U.S. Patent No. 6,052,709, herein Paul.

Rejections Under 35 USC 112

Claims 1, 10, 15, and 50 are rejected under 35 USC 101 because, the Office Action alleges, they may be practiced mentally in conjunction with pencil and paper. The Office Action suggests that the rejection may be over come by changing "method" to "computer-implemented method". To advance prosecution, Applicant has amended claims 1 and 50 to require a method that is computer-implemented. Claims 10 and 15, however, have not been so amended. Claims 10 and 15 require that steps be performed by a server, and, therefore, the claims cannot possibly be practiced mentally in conjunction with pencil and paper.

Rejections Under 35 USC 112

Claims 10, 12 – 14, 29, and 44 - 46 are rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Office Action cites specific issues with claims 10, 15, and 29 as the basis of the rejections. Claims 10, 15, and 29 have been amended to address these issues. Reconsideration and removal of these rejections is respectfully requested.

Rejections Under 35 USC 103

Claims 1 and 26

Claims 1 and 26 are rejected under 35 USC 103(a) as being unpatentable over Horvitz.

As a preliminary matter, in the previous response, Claims 1 and 26 were amended to include limitations of claim 37. Since claim 37 depended on claim 35, the limitations of introduced by claim 35 were also included in the amendment to claims 1 and 26. Claim 37 was found to contain allowable subject matter in the previous Office Action.

The limitations of Claims 1 and 26, before and after amendment, are not taught by the cited art. The Office Action alleges that a basis for finding that claims 1 and 26 are obvious is it is known in the prior art that rules for classifying electronic mail messages can be automatically learned and developed from previous emails. Applicant admits this is true. However, Applicant is not just claiming automatically learning and developing criteria and rules from previous emails. Rather, Applicant is claiming a novel way of automatically determining what previous electronic mail to use to develop criteria and rules for identifying electronic mail as a particular type of electronic mail message, ways that, unlike the cited art, do not require pre-classifying or manually classifying the previous electronic mail that is used to generate such criteria and rules. Claims 1 and 26 are not obvious over the cited art for the following reasons.

The cited art fails to teach generating criteria from a previously unclassified electronic mail message.

Claims 1 and 26 require automatically generating a set of criteria used to identify electronic mail messages as a first type of electronic mail message based on contents of a plurality of electronic mail messages received over a network, where "at least one message of said plurality of electronic mail messages has not been classified, before determining that a threshold number of said plurality of electronic mail messages have a particular content, as belonging to said first type". Thus, claims 1 and 26 require generating criteria used to identify a type of electronic mail from a "previous" electronic mail message that has not been classified as that type. Generating such criteria from previous electronic mail that has not be classified in this way is a feature not suggested in any way by the cited art. The Office Action even admits that Horvitz does not explicitly state this feature.

In fact, Horvitz teaches against using unclassified electronic mail messages to generate criteria for identifying electronic mail as a particular type. Horvitz teaches that previous electronic mail from which rules are generated for classifying electronic mail messages must all be pre-classified. Specifically, Horvitz teaches that the training set of electronic mail messages from whose content a feature set is derived for classifying electronic mail must be manually classified as junk mail beforehand. The "classifier is trained using a set of m e-mail messages (i.e., a "training set", where m is an integer) that have each been manually classified as either legitimate or spam." (col. 10, lines 9 – 12) Thus, a member of the training set only becomes a member by being pre-classified as spam or legitimate. An electronic mail message is not used to automatically generate criteria for identifying electronic mail as spam until is has been pre-classified as spam. Claims 1 and 26, on the other hand, require that an electronic mail message

used to automatically generate criteria for identifying electronic mail as a particular type not be classified as the type.

The cited art teaches a manual way but not an automatic way of determining what electronic mail messages have content that may be used to generate criteria for classifying or identifying electronic mail, much the less the particular way required by claims 1 and 26.

Claims 1 and 26 also recite:

> automatically generating certain criteria based on contents of a plurality of electronic mail messages received over a network;
>
> wherein the step of automatically generating certain criteria includes:
>
> automatically determining what particular content to use to identify electronic mail messages as a first type of electronic mail message by performing steps that include determining that a threshold number of said plurality of electronic mail messages have a particular content,...

Applicant admits that the cited art teaches to use the content of a set of electronic mail messages, such as a training set, to determine what electronic mail message content to use to identify electronic mail messages as a particular type. However, the cited art fails to suggest an automated way of determining what electronic mail message should be in the set of electronic mail messages that is used to determine such content. The system of claims 1 and 26 provide a an automated way of making this determination, by requiring "determining that a threshold number of said plurality of electronic mail messages have a particular content" to "automatically determin[e] what particular content to use to identify electronic mail messages". Thus, if a electronic mail message belongs to a threshold number of electronic mail messages that have a particular content, then the particular content of the electronic mail message is used to identify electronic mail messages as a particular type.

In Horvitz, on the other hand, the particular content of an electronic mail message is not used to identify electronic mail messages unless the electronic mail message has been manually added to a training set. As explained before, all electronic mail in the training set has been already manually classified as spam or legitimate. Even more, Horvitz, fails to disclose or suggest a determination is made to include an electronic mail message in the training set "by determining that a threshold number of said plurality of electronic mail messages have a particular content", as claimed.

The ability to automatically determine what emails content to use to identify electronic mail messages of a particular type, without having to manually classify the previous emails, provides an important and useful function.

The features of claims 1 and 26 provide a way for a computer to automatically determine what emails content to use to identify electronic mail message of a particular type, and in particular, to identify bulk email. Bulk electronic mail may be detected without the need for a human individual to manually classify similar or identical electronic mail, and without the delay inherent in systems requiring manual human intervention.

The following illustration, based on a comparison between an illustrative embodiment of claims 1 and 26 and embodiments taught by Horvitz and Leeds, demonstrates the differences between the cited art and the system of claims 1 and 26. A sender sends bulk mail messages having the following content: "Sale at Digicams – one half off". In Horvitz and claims 1 and 26, the content of the message is used as criteria that identifies an electronic mail message with the content "Sale at Digicams – one half off" as bulk mail. In Horvitz, the determination to use the content of the message made by a human manually adding the email message to a training set. In claims 1 and 26, the determination is made automatically, without human intervention, by a

computer determining that a threshold number of the bulk mail messages (e.g. 50) have the content "Sale at Digicams – one half off"

Claims 10 and 29

Claims 10 and 29, recite:

if said received message signature satisfies said set of one or more criteria, then said electronic mail server processing said electronic mail message as bulk electronic mail;

wherein the step of said electronic mail server determining whether said message signature satisfies a set of one or more criteria includes determining whether a portion of said message signature matches a portion of each of a threshold number of message signatures previously received by said central server from said set of electronic mail servers; and

wherein said threshold number of message signatures are generated from a plurality electronic mail messages that include at least one message that has not been identified, as bulk electronic mail, before determining whether a portion of said message signature matches a portion of each of a threshold number of message signatures previously received by said central server from said set of electronic mail servers.

Claims 10 and 29, as amended, use a set of criteria to determine whether an electronic mail message is processed as bulk electronic mail. The determination of whether a set of criteria is satisfied is based on "determining whether a portion of [a] message signature matches a portion of each of a threshold number of message signatures previously received by [a] central server.", where the "threshold number of message signatures are generated from a plurality

electronic mail messages". Thus, claims 10 and 29 require automatically determining what electronic mail message's message signature to use to identify bulk electronic mail by determining a portion of [a] message signature matches a portion of each of a threshold number of message signatures previously received by [a] central server.

As mentioned previously, the cited fails to teach a way for automatically determining what electronic mail message content to use to generate criteria for classifying or identifying electronic mail, much the less the particular way required by claims 1 and 26. Similarly, for claims 10 and 29, the cited art fails to teach a way for automatically determining what electronic mail message's message signature on which to base criteria for processing an electronic mail message as bulk electronic mail, much the less the particular way required by claims 10 and 29.

Claims 10 and 29 also require that the electronic mail messages whose message signatures are used to determine what electronic mail to process as bulk electronic mail include at least one electronic mail message that has not been pre-classified as bulk electronic mail. As mentioned previously, the cited art fails to teach generating criteria from previously unclassified electronic mail messages. Similarly, for claims 10 and 29, the cited art fails to suggest in any way using the message signature of an unclassified electronic mail message to control the processing of electronic mail as bulk electronic mail, as claimed.

For the foregoing reasons, claims 10 and 29 are patentable.

Claims 15 and 31

Claims 15 and 31, recites:

a central server receiving from a set of electronic mail servers certain message signatures generated from electronic mail messages received by said set of electronic mail servers, wherein each message signature of said certain message signatures includes one or more message signature elements;

said central server generating counts of how many times said one or more message signature elements are matched by message signature elements from message signatures generated for other electronic mail messages; and

said central server transmitting a message reflecting said counts.

Claims 15 and 31 require "transmitting a message reflecting ... counts" "of how many times said one or more message signature elements are matched by message signature elements from message signatures generated for other electronic mail messages." The cited art fails to disclose or suggest in any way generating and transmitting counts of message signatures, much less transmitting them to a server, such as a central server.

The Office Action has analogized the central server in claims 15 and 31 to the control center in Paul. The Office Action correlates the remaining elements of claims 15 and 31 to elements taught by Horvitz. The Office Action makes this correlation by incorporating the reasons of rejection for claim 1 as reasons for rejection of claims 15 and 31. Thus, the Office Action relies on the allegations it made about how the cited art teaches the limitations of claim 1 as the allegations it makes regarding how the cited art teaches the limitations of the remaining elements of claims 15 and 31.

However, the specific limitations of claim 1 are clearly different than those of claims 15 and 31. In particular, claim 1 does cite the limitation of "transmitting a message reflecting ... counts" "of how many times said one or more message signature elements are matched by message signature elements from message signatures generated for other electronic mail messages." Therefore, the Office Action's allegations regarding how the cited art teaches the limitations of claim 1 cannot apply in any way to the limitations of claims 15 and 31. As a result, the Office Action has failed to state or allege that Horvitz teaches this limitation of claims 15 and

31, much less where or what in Horvitz teaches the limitation. The Office Action has thus failed to allege a prima facie case.

> "The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness. (MPEP 2142) To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art...All words in a claim must be considered in judging the patentability of that claim against the prior art." (MPEP 2143.03)
>
> Because a prima facie case has not been established, claims 15 and 31 are allowable.

Nevertheless, the Applicant has examined Horvitz and has uncovered no teaching therein that discloses or suggests "transmitting a message reflecting ... counts" "of how many times said one or more message signature elements are matched by message signature elements from message signatures generated for other electronic mail messages." Paul does not teach this limitation either. In fact, the Examiner has not alleged so.

Paul discloses a system for baiting spammers to use a "spam probe address" to send spam to. Electronic mail addressed to the spam probe address is forwarded to the "spam control center". The spam control center extracts the source of the spam sent to the control center, and then transmits the source as an alert signal to users on a network. (See Abstract, the only section of the specification that explicitly mentions a control center) Teaching to cause spammers to transmit electronic mail messages to a spam control center so that it may learn the source location of the spammers does not in any way suggest "transmitting a message reflecting ... counts" "of how many times said one or more message signature elements are matched by

message signature elements from message signatures generated for other electronic mail messages."

Based on the foregoing, the cited art, alone or in combination, fails to teach all the elements and features of claims 15 and 31. Therefore, claims 15 and 31 are patentable.

Claims 50 and 53

Claims 50 and 53, recite:

automatically generating certain criteria based on contents of a plurality of electronic mail messages received over a network;

wherein the step of automatically generating certain criteria includes, in response to determining that a threshold number of said plurality of electronic mail messages have a particular content, generating one or more criteria that classifies electronic mail messages that have said particular content as a first type of electronic mail;...

wherein the step of determining that a threshold number of said plurality of electronic mail messages have a particular content includes the steps of:

generating message signatures for each electronic mail message of said plurality of electronic mail messages, wherein each message signature includes one or more signature elements; and

counting how many of said one or more signature elements match signature elements from other message signatures.

Claims 50 and 53 cite a system that automatically generates certain criteria to identify electronic mail messages as the particular type by using electronic mail message content to identify electronic mail messages as a particular type. The cited art also teaches to use the

content of a set of electronic mail messages, such as a training set, to determine what electronic mail message content to use to identify electronic mail messages as a particular type. However, the cited art fails to suggest an automated way of determining what electronic mail message should be in the set of electronic mail messages that is used to determine such content. The system of claims 50 and 53 provide an automated way of making this determination, by requiring "determining that a threshold number of said plurality of electronic mail messages have a particular content". Thus, if an electronic mail message belongs to a threshold number of electronic mail messages that have a particular content, then the particular content of the electronic mail message is used to identify electronic mail messages as a particular type.

In Horvitz, on the other hand, the particular content of an electronic mail message is not used to identify electronic mail messages unless the electronic mail message has been manually added to a training set. As explained before, all electronic mail in the training set has been already manually classified as spam or legitimate. Even more, Horvitz, fails to disclose or suggest a determination is made to include an electronic mail message in the training set by "generating message signatures for each electronic mail message of [a] plurality of electronic mail messages, wherein each message signature includes one or more signature elements", and "counting how many of said one or more signature elements match signature elements from other message signatures", as claimed.

REQUESTED CLAIM SUPPORT

The Primary and Supervising Examiner has requested that the Applicant note where support for independent claims the particular limitation the noted below may be found in the specification. Support for the independent claim may be found in general in the section Functional Overview section on pages 6 and 7, and the section INDENTIFYING BULKMAIL BASED ON CONTENTS, beginning on page 16.

Support for the following limitation of claim 1, "wherein at least one message of said plurality of electronic mail messages has not been classified, before determining that a threshold number of said plurality of electronic mail messages have a particular content, as belonging to said first type, is as follows. FIG. 3 clearly shows an example of use of this feature. At step 306, an electronic mail message is only further processed if it has not been marked as bulk electronic mail (see also Application, page 17, lines 10 – 17). The step is performed before step 342, where the electronic mail message is marked as bulk mail if a count of matching signature elements is exceeded.

Dependant Claims

The pending claims not discussed so far are dependant claims that depend on an independent claim that is discussed above. Because each of the dependant claims include the limitations of claims upon which they depend, the dependant claims are patentable for at least those reasons the claims upon which the dependant claims depend are patentable. In addition, the dependent claims introduce additional limitations that independently render them patentable.

For the reasons set forth above, Applicant respectfully submits that all pending claims are patentable over the art of record, including the art cited but not applied. Accordingly, allowance of all claims is hereby respectfully solicited.

The Examiner is respectfully requested to contact the undersigned by telephone if it is believed that such contact would further the examination of the present application.

Respectfully submitted,

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